

Appl. No. 10/657,320  
Atty. Docket No. 8652C  
Amdt. dated November 2, 2004  
Reply to Office Action of August 4, 2004  
Customer No. 27752

## REMARKS

### Claim Status

Claims 1 - 15 are pending in the present application. No additional claims fee is believed to be due.

### Summary of the Invention

The present invention relates to a printed substrate having microscopic color density variation. The printed substrate has indicia on at least one of its outer surfaces, where the indicia is comprised of print elements. The printed substrate includes three separate color densities: a substrate color density, a background color density, and a print element color density. The background color density is greater than said substrate color density and less than said print element color density. Typical printing methods have only two color densities, the background color density where no ink is printed, and the print element color density where the ink is printed.

The printed substrates having these three color densities provide either 1) images with higher ink densities while using standard inks at standard ink laydowns and having standard ink rub off characteristics or 2) images with the same ink densities as standard printing but using lower levels of standard inks and getting reduced levels of ink rub off.

As defined in the present invention, color density is the logarithmic relationship between incident light and reflected light,  $D = \log_{10} I/R$ . (page 3, line 42). This measures the microscopic ink density, independent of components of macroscopic color density such as the size or frequency of individual print elements. (page 3, lines 4-12) One specific benefit of the present invention is the variation of a given print region without a change in the size or frequency of individual print elements.

### Rejection Under 35 USC 102 Over Mowry

The Examiner has repeated a rejection of Claims 1-3, 5, 6, 8, 10, 12, 14 and 15 as being anticipated by U.S. Pat. No. 5,853,197 issued to Mowry, Jr. et al. on December 29, 1998 ("Mowry"). Applicant traverses this rejection.

Mowry relates to a security document comprising a variety of printed indicia combinations, each of which provide a different imaging convention known to prevent the copying of the document without notice. Each imaging convention is comprised of a specific selection of print elements (e.g. small and large dots, line segments, triangles, etc. (Col. 5, lines 46-64). The different arrays of dots and lines all react differently upon being seen by a color copier and as a result the copier can not create a perfect replica of the original document. All of

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these print elements are printed at the same desired print element ink color density, as defined by the present invention, on a substrate with a substrate color density. Nowhere in Mowry is it taught that the third color density of ink, required by the present invention, should be applied to the substrate around the print elements. In fact, the application of such a third density in the article of Mowry would result in the activation of the security notification (e.g. the word "VOID" in the figures of Mowry), because the particular geometric relationships critical in Mowry would be altered by the background ink.

The Examiner first points to "a density caused by the rough edges of the printed dot" at column 5, lines 49-54 as defining the background color density of the present invention. Applicant submits that there is nothing in the teaching at lines 49 - 54 that teaches a separate and distinct ink color density around the print image. That section of Mowry simply teaches that dot printed element may not be perfectly circular because of printing conditions. In such a case, there is still only two ink color densities in and around the dot, the substrate color density and the print element color density.

The Examiner next points to references to "density of the background printed matter", etc. discussed at column 6, lines 9-29 as defining the background color density of the present invention. Again, Applicants respectfully submit that this teaching does not teach the background color density of the present invention. Mowry, at column 6, lines 9-29, specifically discussed density as a variation of print element coverage within the image. ("The density of the background printed matter . . . may vary from 3 percent coverage to 50% coverage." ) This is clearly referring to the alteration of the size and frequency of the print elements to achieve a macroscopic density, which is one of the specific situations that the present invention eliminates.

In order to be held to be invalid as being anticipated, all of the elements and limitations of the claim must be described in a single reference. Merck & Co., Inc. v. Teva Pharmaceuticals USA, Inc., 347 F.3d 1367 (Fed. Cir. 2003). Applicant again respectfully submits that since Mowry does not teach the background color density for use in its printed article, Mowry does not anticipate the Claims of the present invention. Therefore, Applicant submits that the rejection of the claims of the present invention under §102(b) as being anticipated by Mowry is erroneous and should be withdrawn.

#### Rejection Under 35 USC 102 Over Brugada

The Examiner has repeated a rejection of Claims 1-3, 8 and 10-14 as being anticipated by U.S. Pat. No. 5,904,375 issued to Brugada on May 18, 1999 ("Brugada"). Applicant traverses this rejection as well.

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Brugada also relates to security supports, including paper, comprising a micropattern of microtext or microlines printed on the support. The elements of the micropattern are separated by distances smaller than the limit of resolution power of a copying machine. The microelements are printed on the substrate using a first ink, a nonabsorbent ink which is either transparent or the same color as the support (Col 2, line 26-45). Here, again, there is no background color density of the ink. In fact, the resulting virgin security paper is designed to have only the support color density so the micropattern is not visible on the virgin sheet. Since the virgin security paper of Brugada only comprises one color density, the substrate color density, it does not anticipate the claims for the printed substrates of the present invention. Brugada then teaches that the virgin security paper may be printed or written on, where due to the differential absorbencies between the substrate or the paper and the nonabsorbent printed micropattern, the micro pattern will be observable under magnification in the body of the printed print element or writing. The purpose of the micropattern is that it will be irresolvable to a copier and therefore not visible in a duplicated copy, thereby providing a mechanism to check for originality of the document. Again, nowhere in the teaching of the printed or written upon security document of Brugada is the desire to use three ink densities in printing an indicia upon a support.

The Examiner points to item #7, of Brugada Figure 1 as representing the background color density of the present invention. Applicant points out that item #7, just as item #10 from the first office action, is the printed or written image that is printed or written over the substrate/nonabsorbent micropattern support and in no way represents a background color density. Again, items #7 and #10 are variations of the size and frequency of the print elements therein. Specifically, item #7 comprises a high frequency of very small dots as compared to the larger, less frequent letter print elements. The fact remains that both the small dots of #7 and the letters of #5 are print elements of the present invention having the same localized ink color density as defined by the present invention. Brugada, like Mowry, teaches the variation of the size and frequency of print elements. However, nothing in the teachings or figures teach a third, intermediate level of ink color density, the logarithmic relationship of incident and reflected light, as required by the present invention.

Again, Applicant submits that since Brugada does not teach the background color density for use in its printed article, Brugada does not anticipate the Claims of the present invention. Therefore, Applicant submits that the rejection of the claims of the present invention under §102(b) as being anticipated by Mowry is erroneous and should be withdrawn.

Rejection Under 35 USC 103(a) Over Mowry in view of Harris

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The Examiner has repeated a rejection of Claims 4, 7 and 9 under 35 USC 103(a) as being unpatentably obvious over Mowry in view of U.S. Pat. No. 5,871,615 issued to Harris on February 16, 1999 ("Harris"). Applicant respectfully traverses this rejection since the combination of Mowry and Harris does not establish a *prima facie* case of obviousness because it does not teach or suggest all of Applicant's claim limitations.

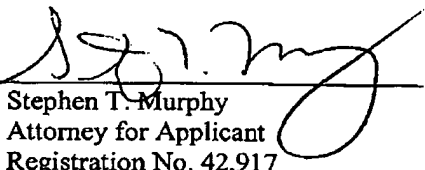
As discussed above Mowry relates to a security document comprising a variety of printed indicia combinations, each of which provide a different imaging convention known to prevent the copying of the document with out notice. However, as pointed out, Mowry does not teach the background color density of the present invention. Harris relates to a security paper that has been formed with a tactile surface profile which has been printed. The Examiner used Harris to provide a textured paper to be used in the security document of Mowry to introduce the textured element of Claims 4, 7, and 9 of the present invention.

To establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), the prior art reference or combination of references must teach or suggest all the claim limitations. In re Vaeck, 947 F.2d 488 (Fed Cir. 1991). Since Mowry does not teach the background color density as required by the claims of the present invention and Harris does not resolve this omission, the combination of Mowry and Harris does not teach all the claim limitation of Claims 4, 7, and 9 or the present invention. Therefore, Claims 4, 7, and 9 or the present invention are unobvious over the combination of Mowry and Harris and the rejection of the claims under 35 U.S.C. §103(a) is erroneous and should be withdrawn.

#### Conclusion

In light of the above remarks, it is requested that the Examiner reconsider and withdraw the rejections under 35 U.S.C. § 102(b) and 103(a). Early and favorable action in the case is respectfully requested. In view of the foregoing, Applicant respectfully requests reconsideration of this application and allowance of Claims 1-15.

Respectfully submitted,  
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